

The instruments with which the observations accompanying this paper were made, are a five-, and a seven-foot equatorial; the former was constructed under the direction of the late Capt. Huddart, and is remarkable for its extreme lightness, for the promptitude with which it obeys its adjustments, and for its ability in retaining them. Its object-glass, of $3\frac{3}{4}$ inches aperture, and of five-foot focal length, is the work of the late P. and J. Dollond; whilst its divided circles, microscopes, &c., were completed by Messrs. J. and E. Troughton. A description of it is given, and a drawing is annexed. The latter is a telescope of 7-foot focal length, and five inches clear aperture; it was made by Tulley, and is mounted on the polar axis of the old equatorial sector, made by Sisson for the Royal Observatory, and for the use of which, acknowledgment is made to the Council of this Society.

The micrometers employed are the work of Mr. Troughton, and have long since been familiar to astronomers under the name of Troughton's Wire Micrometer. The measures of distance are all central. Various precautions employed in conducting the observations are narrated; contrivances whereby some difficulties were surmounted are enumerated. The observations of each star were generally made in each other's presence, but occasionally in different parts of the observatory, and with different instruments, without any communication with each other. In some instances the observations of Mr. Troughton or Mr. Richardson have been appealed to, in order to settle discrepancies.

To the observations of each star the authors attach their mean result; the results obtained by other observers are also placed in the order in which they were made; but there is one circumstance to which they solicit attention, namely, that as far as Sir William Herschel's observations are concerned, the dates and results will not accord with those published by Sir William in the Transactions, for reasons which will be found in a former part of the paper.

As an appendix, measures of a few stars less perfectly observed are added, which, although not entitled to equal confidence with the others, the authors think may perhaps still have their use.

On the Effects of Temperature on the Intensity of Magnetic Forces; and on the Diurnal Variation of the Terrestrial Magnetic Intensity. By Samuel Hunter Christie, Esq. M.A. of Trinity College, Cambridge, Fellow of the Cambridge Philosophical Society: of the Royal Military Academy. Communicated by the President. Read June 17, 1824. [*Phil. Trans.* 1825, p. 1.]

The details of the author's experiments upon the above subjects are given in an extended series of tables, commencing with a temperature of -3° Fahr. up to 127° Fahr. Mr. Christie found that as the temperature of the magnets increased, their intensity diminished, in direct contradiction to the notion of destroying magnetism by intense cold. From a temperature of 80° the intensity decreased ra-

pidly as the temperature increased, and at above 100° a portion of the power of the magnet was permanently destroyed.

In regard to the diurnal changes in the terrestrial intensity, the author's experiments lead him to suggest the following queries for the consideration of those who may have an opportunity of making such observations :—Does the time of the minimum intensity correspond with the time at which the sun is on the magnetic meridian? Does the time of maximum intensity correspond to the sun's passing the plane of the equator of the dipping-needle? Does any change take place in the intensity while the sun is below the horizon? Are any periodical effects corresponding to the time of rotation of the sun about its axis observable? Is the diurnal change of intensity at the time of new moon sensibly different from what it is at the time of quadrature? If the moon do produce an effect on the needle, it is evidently less than that of the sun;—should we then attribute it to solar heat, or to the magnetism of the sun?

The Croonian Lecture. On the Existence of Nerves in the Placenta.
By Sir Everard Home, Bart. V.P.R.S. Read November 18, 1824.
[*Phil. Trans.* 1825, p. 66.]

In this lecture the author makes known his discovery of the existence of nerves, both in the foetal and maternal portions of the placenta. His previous researches had led him to doubt the existence of blood-vessels without nerves, and the extreme vascularity of the placenta led him to suspect them in that organ. With the assistance of Mr. Bauer, therefore, he first examined the placenta of the Seal, the arteries and veins of which had been injected, and in which nerves were discovered, not only surrounding the umbilical arteries, but also in the uterine portion.

In the pregnant uterus of the Tapir of Sumatra, in which, there being no placenta, the umbilical chord is connected with the chorion, the nerves were very conspicuous in the transparent portion of the chorion, along which the branches of the funis pass before they arrive at the spongy part.

Having thus established the existence of nerves in the placenta, and where that is wanting in the flocculent chorion, Sir Everard proceeds to offer some general remarks upon their probable uses and influences.

From the various sources, the number, and the ganglia of the uterine nerves, and from the circumstance of their becoming enlarged during pregnancy, he infers their powerful influence on the foetus in utero; and for the further illustration of this subject, the author adds a description of the nerves connected with the generative organs in the human species, the quadruped, the bird, and the frog.

He concludes this lecture with remarking, that since the discovery of the placental nerves proves the existence of a communication through their medium, between the brain of the child and that of the mother, some light may be thrown on the degree of dependence